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(54) **Digital communication systems**

(57) A digital communication system comprising a network of routers R1-R3 linked together by links LK12-LK23 and having LANs LAN1-LAN7 coupled to them, and using IP (Internet Protocol), under which each LAN has a subnet address, and each host on a LAN has the subnet address as the high-order part of its own address. In IP, each router contains a set of interface/LAN tables each listing the low-order address portions of the addresses of the hosts attached to the LAN plus the MAC (medium access control) identifiers of those hosts, and a set of link tables listing the subnet addresses of the LANs reachable through those links. In the present system, both the interface tables and the link tables contain the full host addresses of all hosts reachable through those interfaces and links, and the routers also contain means for polling the interfaces for unknown hosts. Each router also contain an ARP (address resolution protocol) unit (30, Fig. 2) for detecting ARP requests from a source for a destination having the same subnet address as the source but not on the same interface, and returning a proxy ARP response giving the router's identification. A host can thereby be moved to a LAN whose address does not match that of the host.

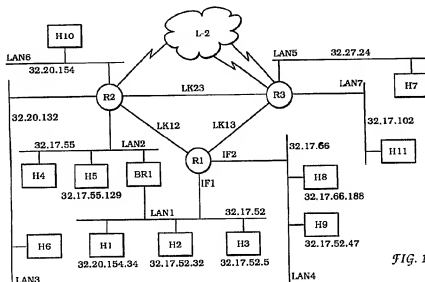


Fig. 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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